Great Frigatebird (Frigata minor): At-Sea Distribution and Abundance

The following maps represent all At-Sea observations made by personnel of the Pacific Ocean Biological Survey Program from February, 1963, through August, 1965.

Each square represents one days observation from the first through the fifteenth of the month, while each circle represents one days observation from the sixteenth through the thirty-first of each month.

Numbers refer to actual number of birds counted for each day.

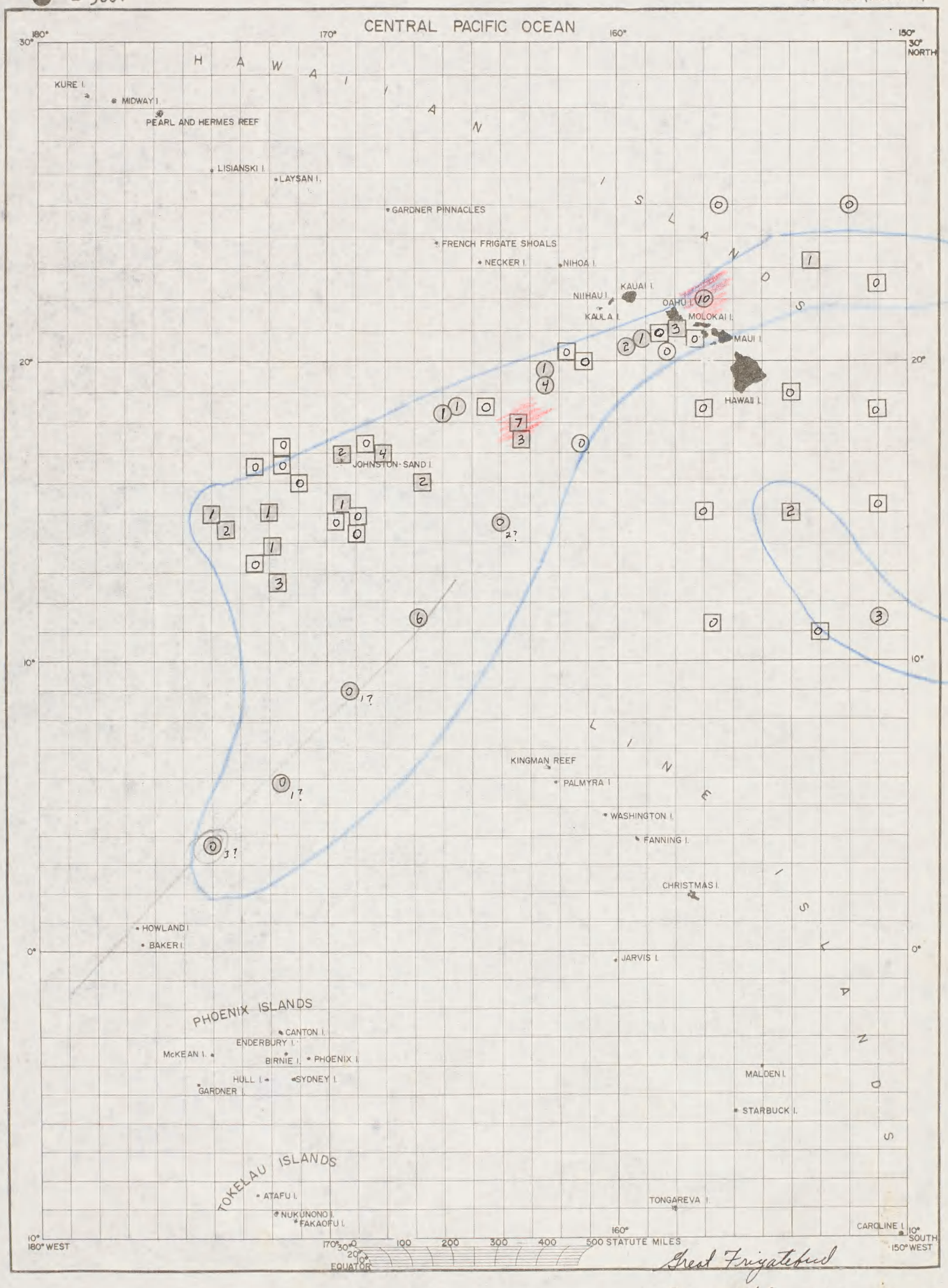
Blue line encloses total area of occurrence. Red indicates exceptionally high numbers.

□ = 1-15 January
○ = 16-31 January

○ = 0 birds
④ = 1-10 "
○ = 11-25 "
○ = 26-50 "
○ = 51-100 "
● = 101-500"
● = 500+ "

JANUARY

SI-MNH-38 (REV. 9-65)



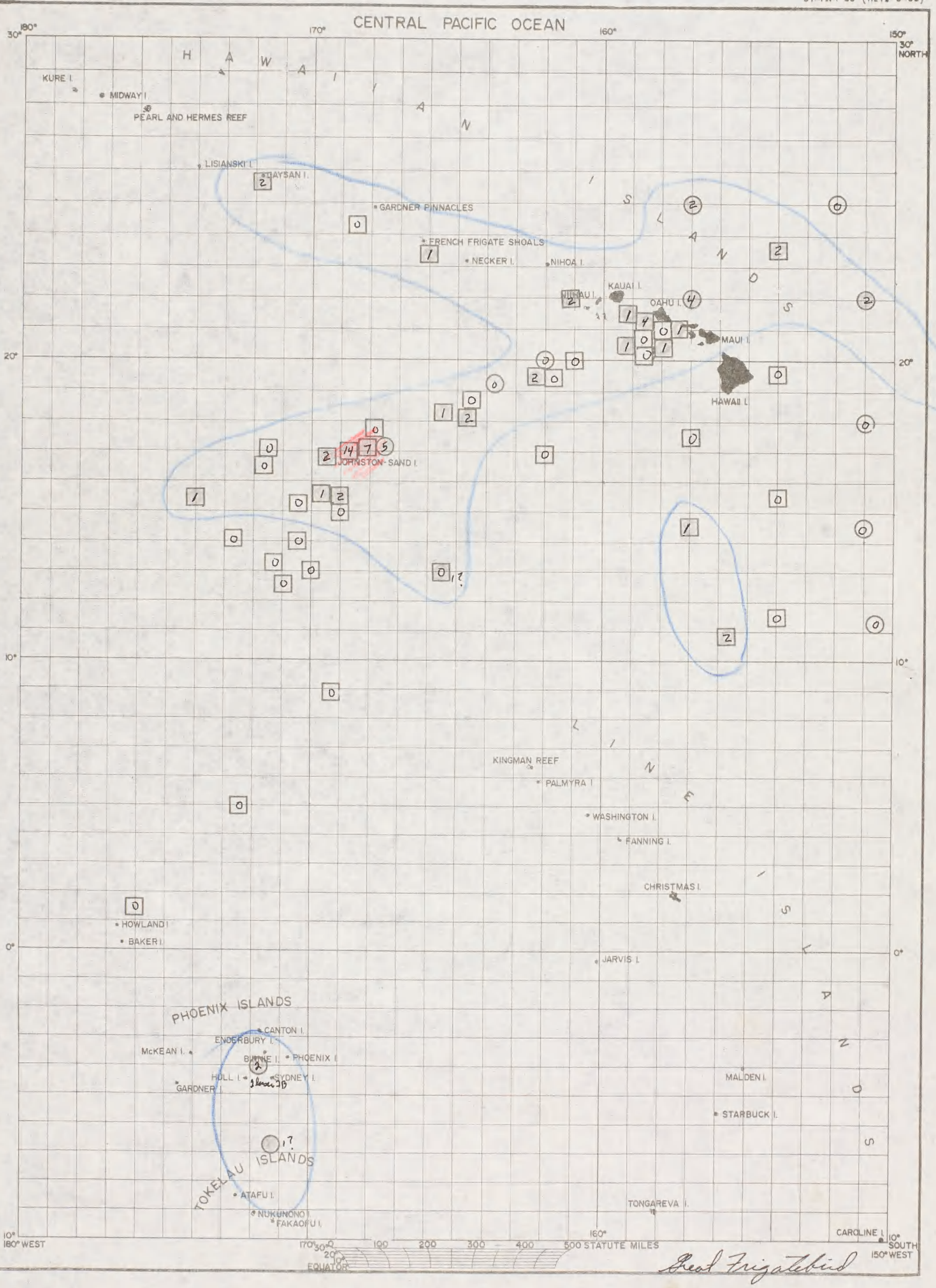
Great Frigatebird

? = doubtful species

□ = 1-15 February
○ = 16-31 February
④ == 0 birds
○ = 1-10 "
○ = 11-25 "
○ = 26-50 "
○ = 51-100 "
● = 101-500 "
● = 500+ "

FEBRUARY

SI-MNH-38 (REV. 9-65)

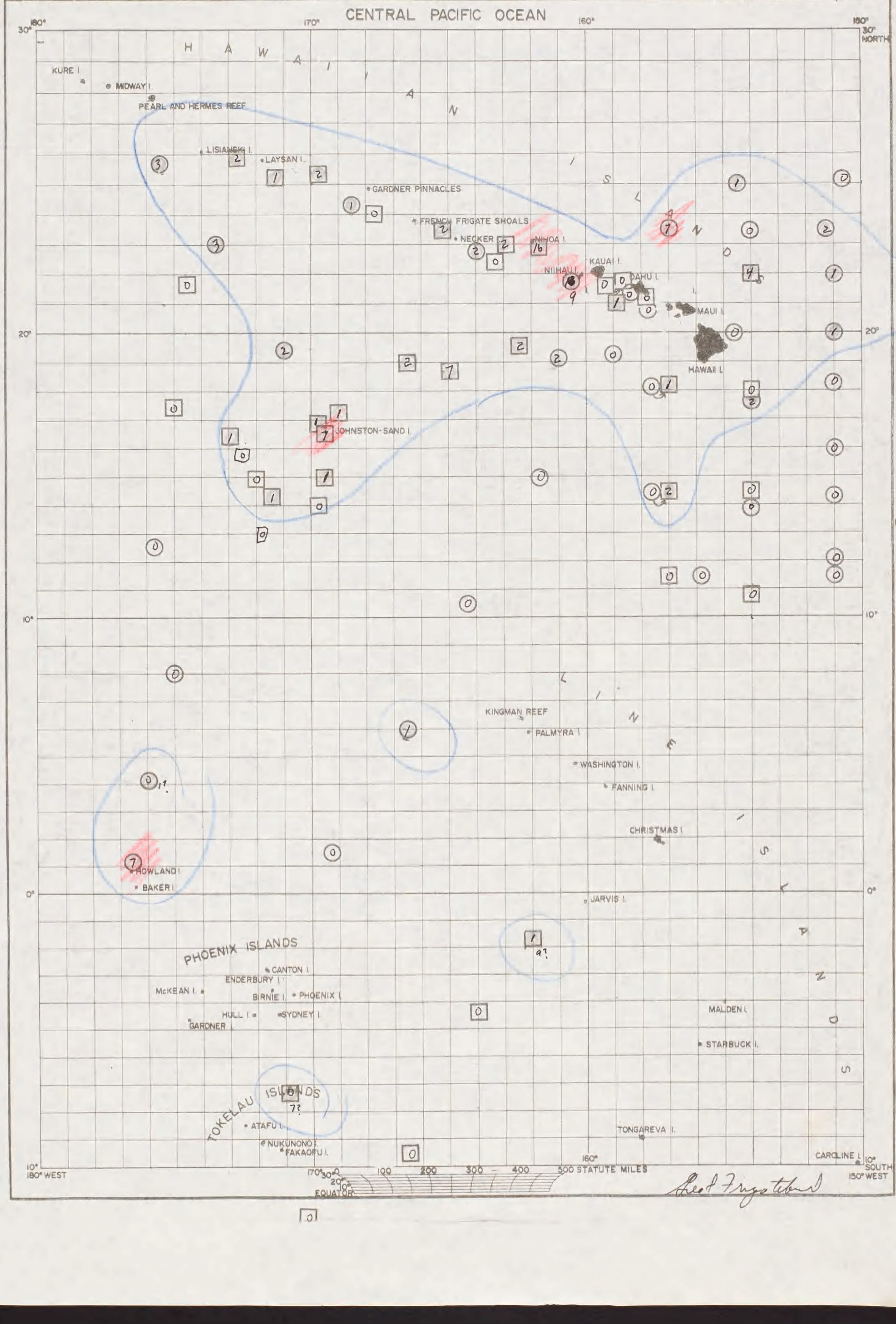


Great Frigatebird

□ = 1-15 March
○ =16-31 March
④ = 0 birds
○ = 1-10 "
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500 "
● =500+ "

MARCH

SI-MNH-38 (Rev. 9-85)



Leo Fryxell

□= 1-15 April
○=16-31 April
○= 0 birds
④= 1-10 "
○=11-25 "
○=26-50 "
○=50-100 "
●=101-500"
●=500+ "

APRIL

SI-MNH-38 (Rev. 9-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 150° WEST

HAWAIIAN ISLANDS
KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
KAUAI I.
OAHU I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.
PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.
TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

160° 170° 30° 20° 10° EQUATOR
0 100 200 300 400 500 STATUTE MILES

Great Frigatebird

□ 1-15 May

○ = 16-31 May

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

MAY

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

10° SOUTH

HAWAII

KURE I.

MIDWAY I.

PEARL AND HERMES REEF

LISIANSKI I.

LAYSAN I.

GARDNER PINNACLES

FRENCH FRIGATE SHOALS

NECKER I.

NIHOA I.

KAUAI I.

OAHU I.

MAUI I.

HAWAII I.

JOHNSTON-SAND I.

KINGMAN REEF

PALMYRA I.

WASHINGTON I.

FANNING I.

CHRISTMAS I.

HOWLAND I.

BAKER I.

JARVIS I.

PHOENIX ISLANDS

CANTON I.

ENDERBURY I.

McKEAN I.

BIRNIE I.

PHOENIX I.

HULL I.

SYDNEY I.

GARDNER I.

MALDEN I.

STARBUCK I.

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

180° WEST 170° 160° 150° WEST

0 100 200 300 400 500 STATUTE MILES

30° 20° 10° EQUATOR

Great Frigatebird

□ 1-15 June

○ = 16-31 June

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

JUNE

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

10° SOUTH

180° WEST 170° 160° 150° WEST

HAWAII

KURE I.

MIDWAY I.

PEARL AND HERMES REEF

LISIANSKI I.

LAYSAN I.

GARDNER PINNACLES

FRENCH FRIGATE SHOALS

NECKER I.

NIHOA I.

KAUAI I.

OAHU I.

MAUI I.

HAWAII I.

JOHNSTON-SAND I.

KINGMAN REEF

PALMYRA I.

WASHINGTON I.

FANNING I.

CHRISTMAS I.

HOWLAND I.

BAKER I.

JARVIS I.

PHOENIX ISLANDS

CANTON I.

ENDERBURY I.

McKEAN I.

BIRNIE I.

PHOENIX I.

HULL I.

SYDNEY I.

GARDNER I.

MALDEN I.

STARBUCK I.

LINE ISLANDS

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

100 200 300 400 500 STATUTE MILES

EQUATOR

Great Frigatebird

□ 1-15 July
○ = 16-31 July
○ = 0 birds
Ⓐ =1-10 birds
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500"
● =500+ "

JULY

SI-MN-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 170° 160° 150° WEST

HAWAIIAN ISLANDS

KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
KAUAI I.
OAHU I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
JARVIS I.
HOWLAND I.
BAKER I.
PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.
TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

LINE ISLANDS

0 100 200 300 400 500 STATUTE MILES
30° 20° 10° EQUATOR

Great Circle

□ 1-15 August

○ = 16-31 August

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

AUGUST

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

10° SOUTH

HAWAIIAN ISLANDS

KURE I.

MIDWAY I.

PEARL AND HERMES REEF

LISIANSKI I.

LAYSAN I.

GARDNER PINNACLES

FRENCH FRIGATE SHOALS

NECKER I.

NIHOA I.

KAUAI I.

OAHU I.

MAUI I.

HAWAII I.

JOHNSTON-SAND I.

KINGMAN REEF

PALMYRA I.

WASHINGTON I.

FANNING I.

CHRISTMAS I.

HOWLAND I.

BAKER I.

JARVIS I.

PHOENIX ISLANDS

CANTON I.

ENDERBURY I.

McKEAN I.

BIRNIE I.

PHOENIX I.

HULL I.

SYDNEY I.

GARDNER I.

MALDEN I.

STARBUCK I.

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

180° WEST 170° 160° 150° WEST

0 100 200 300 400 500 STATUTE MILES

30° 20° 10° EQUATOR

Great Frigatebird

□ 1-15 September

○ = 16-31 September

○ = 0 birds

④ = 1-10 "

○ = 11-25 "

○ = 26-50 "

○ = 51-100 "

● = 101-500"

● = 500+ "

SEPTEMBER

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

10° SOUTH

180° WEST 170° 160° 150° WEST

100 200 300 400 500 STATUTE MILES

EQUATOR

HAWAII

KURE I.

MIDWAY I.

PEARL AND HERMES REEF

LISIANSKI I.

LAYSAN I.

GARDNER PINNACLES

FRENCH FRIGATE SHOALS

NECKER I.

NIHOA I.

KAUAI I.

OAHU I.

MAUI I.

HAWAII I.

JOHNSTON-SAND I.

KINGMAN REEF

PALMYRA I.

WASHINGTON I.

FANNING I.

CHRISTMAS I.

HOWLAND I.

BAKER I.

JARVIS I.

PHOENIX ISLANDS

CANTON I.

ENDERBURY I.

McKEAN I.

BIRNIE I.

PHOENIX I.

HULL I.

SYDNEY I.

GARDNER I.

MALDEN I.

STARBUCK I.

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

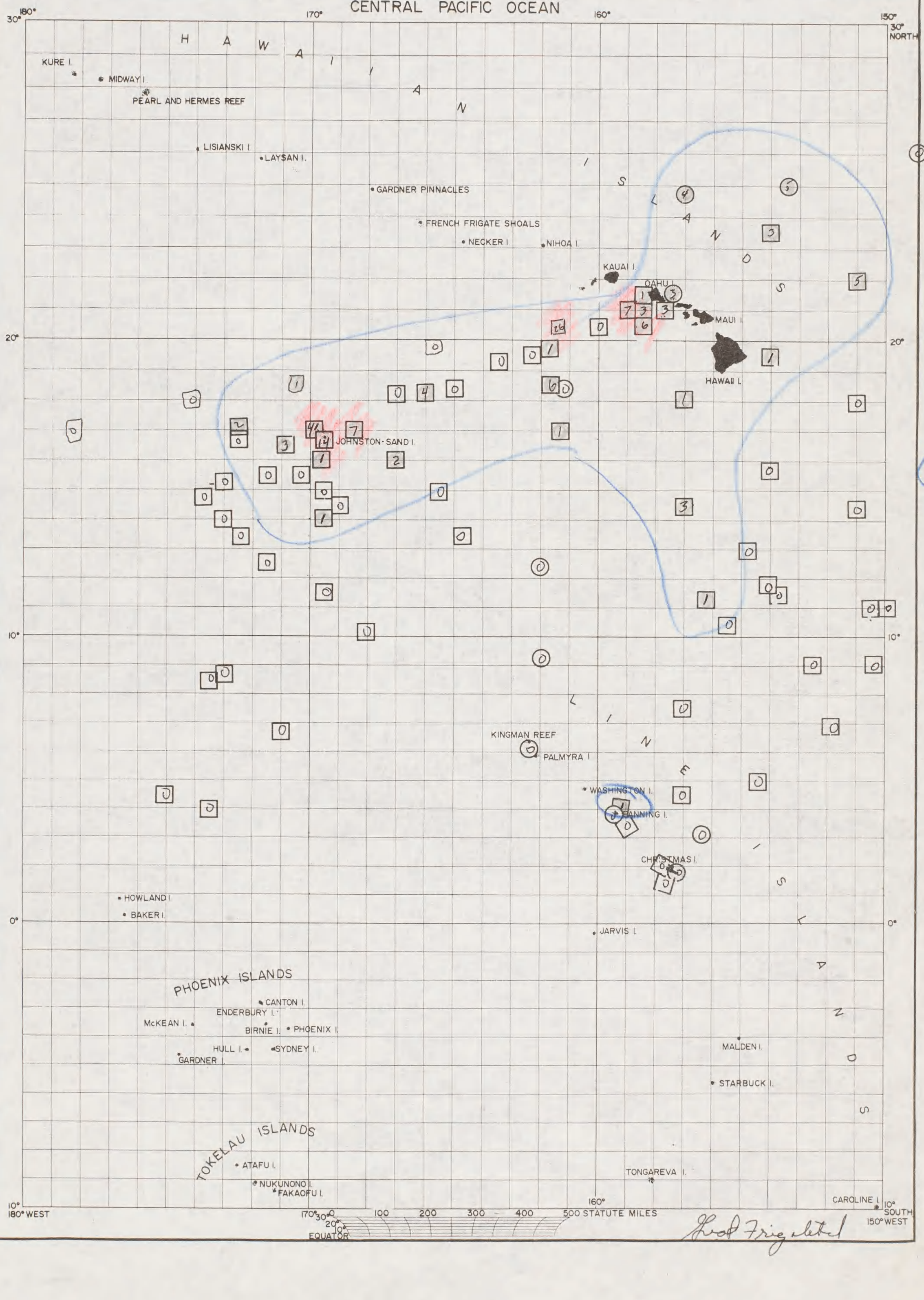
Great Frig. Ebird

□ 1-15 October
○ = 16-31 October
○ = 0 birds
④ = 1-10 "
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500"
● =500+ "

OCTOBER

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN



Great Frigatebird

□ 1-15 November

○ = 16-31 November

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

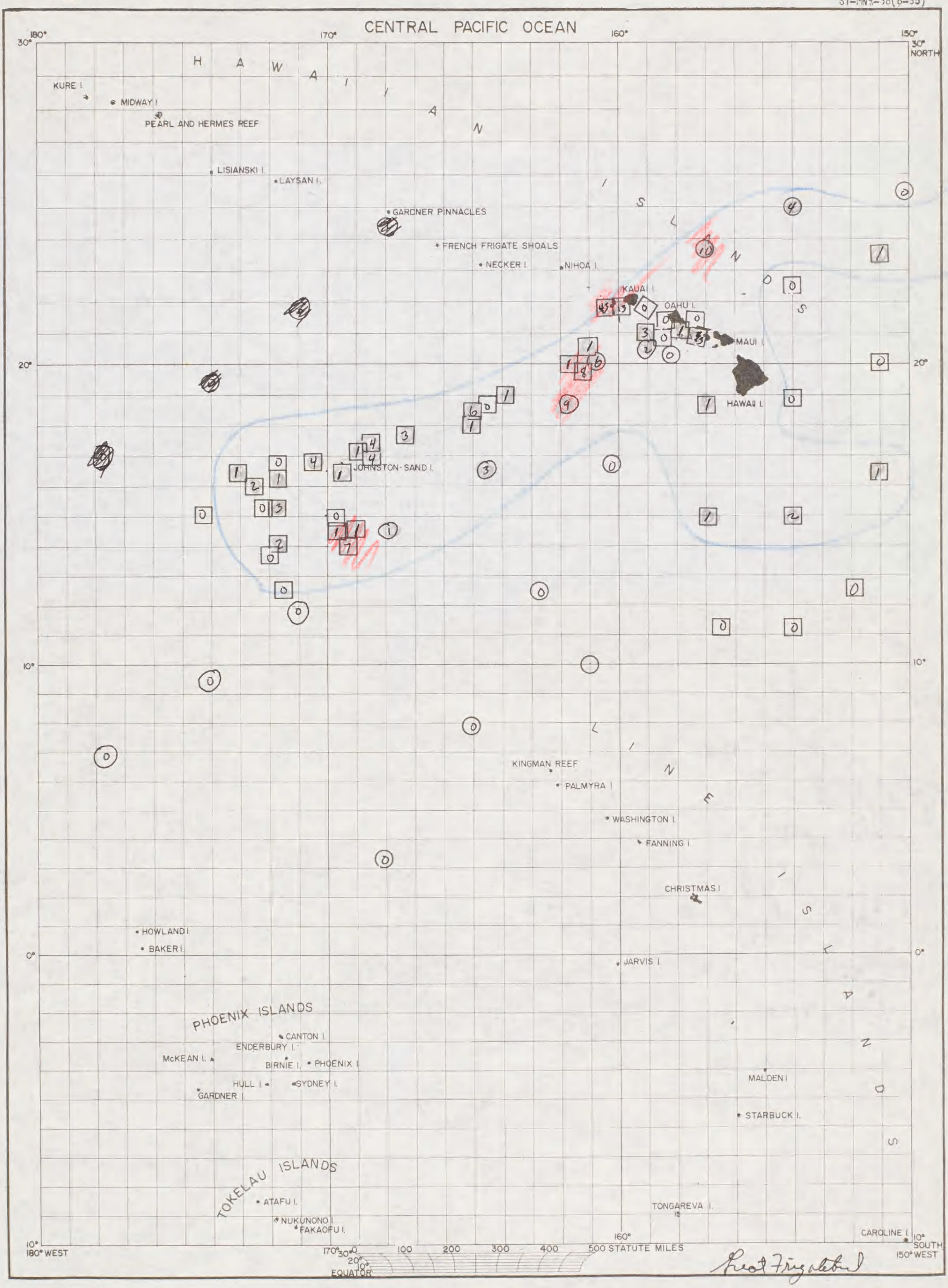
○ =51-100 "

● =101-500"

● =500+ "

NOVEMBER

SI-MNH-38(8-55)



Great Frigatebird

□ 1-15 December
○ = 16-31 December
○ = 0 birds
④ = 1-10 "
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500"
● =500+ "

DECEMBER

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150° 30° NORTH
30° 20° 10° 0° 10° SOUTH
180° WEST 170° 160° 150° WEST

HAWAIIAN ISLANDS

KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
KAUAI I.
OAHU I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.
PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.
TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

EQUATOR

0 100 200 300 400 500 STATUTE MILES

Great Frigatebird

□ = 1-15 January
○ = 16-31 January

○ = 0 birds
④ = 1-10 "
○ = 11-25 "
○ = 26-50 "
○ = 51-100 "
● = 101-500 "
● = 500+ "

JANUARY

SI-MN'4-38 (REV. 9-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 150° WEST

HAWAIIAN ISLANDS

KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
NIIHAU I.
KAUAI I.
KAULA I.
OAHU I.
MOLOKAI I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.

PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.

TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

EQUATOR
0 100 200 300 400 500 STATUTE MILES

Great Frigatebird

? = doubtful species

□ = 1-15 January
○ = 16-31 January

○ = 0 birds
④ = 1-10 "
○ = 11-25 "
○ = 26-50 "
○ = 51-100 "
● = 101-500 "
● = 500+ "

JANUARY

SI-MN1-38 (REV. 9-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150° WEST
30° NORTH
20°
10°
0°
10° SOUTH

HAWAIIAN ISLANDS
KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
KAUAI I.
NIIHAU I.
KAULA I.
OAHU I.
MOLOKAI I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.
PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.
TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

0 100 200 300 400 500 STATUTE MILES
EQUATOR

Great Frigatebird
? = doubtful species

□ = 1-15 February
○ = 16-31 February
④ == 0 birds
○ = 1-10 "
○ = 11-25 "
○ = 26-50 "
○ = 51-100 "
● = 101-500 "
● = 500+ "

FEBRUARY

SI-MNH-38 (REV. 9-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150° 30° NORTH

HAWAIIAN ISLANDS

KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
KAUAI I.
NIIHAU I.
OAHU I.
MAUI I.
HAWAII I.
JOHNSTON SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.
PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.
TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

30° 20° 10° 0° 10° SOUTH

180° WEST 170° 160° 150° WEST

0 100 200 300 400 500 STATUTE MILES

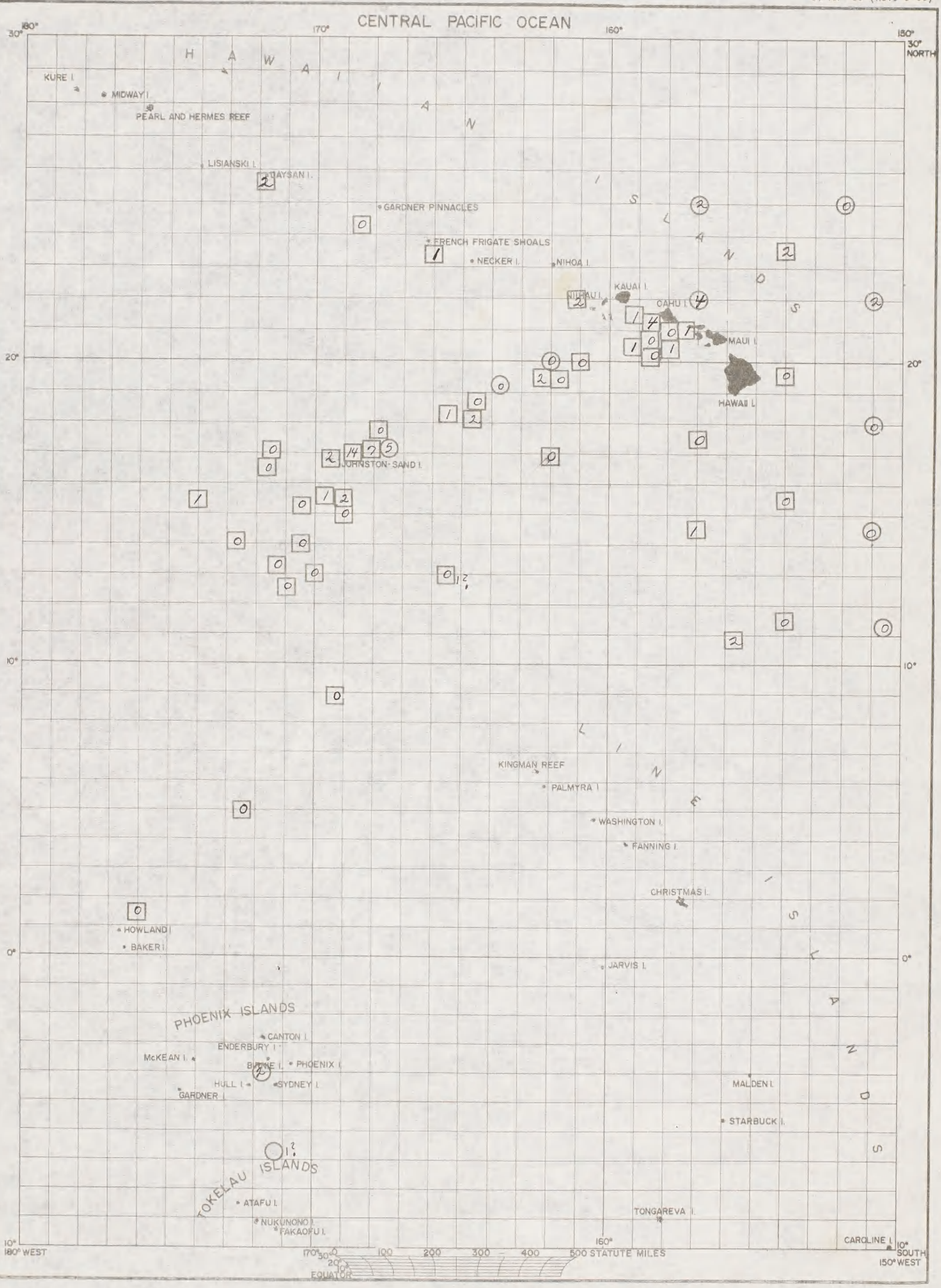
EQUATOR

Great Frigatebird

□ = 1-15 February
○ = 16-31 February
④ = 0 birds
○ = 1-10 "
○ = 11-25 "
○ = 26-50 "
○ = 51-100 "
● = 101-500 "
● = 500+ "

FEBRUARY

SI-MNH-38 (REV. 9-65)



□ = 1-15 March
○ =16-31 March
④ = 0 birds
○ = 1-10 "
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500"
● =500+ "

MARCH

SI-41NH-38 (Rev. 9-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 150° WEST

HAWAII

KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER
NIHOA I.
NIIHAU I.
KAUAI I.
OAHU I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.
PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.
TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

0 100 200 300 400 500 STATUTE MILES
0 20° 10° EQUATOR

Great Frigatebird

□ = 1-15 March
○ =16-31 March
④ = 0 birds
○ = 1-10 "
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500 "
● =500+ "

MARCH

SI-NMH-38 (REV. 9-85)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 150° WEST

HAWAII

KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
NIIHAU I.
KAUAI I.
OAHU I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.
PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.
TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

170° 30° 20° 10° EQUATOR
100 200 300 400 500 STATUTE MILES
160°

Great Frigatebird

□= 1-15 April
○=16-31 April
○= 0 birds
④= 1-10 "
○=11-25 "
○=26-50 "
○=50-100 "
●=101-500"
●=500+ "

APRIL

SI-MNH-38 (REV. 9-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 170° 160° 150° WEST

HAWAIIAN ISLANDS
KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
KAUAI I.
OAHU I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.

LINE ISLANDS
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.

PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.

TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

100 200 300 400 500 STATUTE MILES
30° 20° 10° EQUATOR

Great Frigatebird

□ = 1-15 April
○ = 16-31 April
○ = 0 birds
④ = 1-10 "
○ = 11-25 "
○ = 26-50 "
○ = 50-100 "
● = 101-500 "
● = 500+ "

APRIL

SI-MNH-38 (Rev. 9-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 170° 160° 150° WEST

HAWAIIAN ISLANDS
KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
NECKER I.
NIHOA I.
KAUAI I.
OAHU I.
MAUI I.
HAWAII I.
JOHNSTON-SAND I.
KINGMAN REEF
PALMYRA I.
WASHINGTON I.
FANNING I.
CHRISTMAS I.
HOWLAND I.
BAKER I.
JARVIS I.
PHOENIX ISLANDS
CANTON I.
ENDERBURY I.
McKEAN I.
BIRNIE I.
PHOENIX I.
HULL I.
SYDNEY I.
GARDNER I.
MALDEN I.
STARBUCK I.
TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

SOUTH PACIFIC OCEAN

0 100 200 300 400 500 STATUTE MILES
0 20° 10° EQUATOR

Great Frigatebird

□ 1-15 May

○ = 16-31 May

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

MAY

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

HAWAIIAN ISLANDS

KURE I.

MIDWAY I.

PEARL AND HERMES REEF

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STARBUCK I.

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

180° WEST 170° 160° 150° WEST

10° SOUTH

0 100 200 300 400 500 STATUTE MILES

30° 20° 10° EQUATOR

Great Frigatebird

□ 1-15 May

○ = 16-31 May

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

MAY

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

HAWAIIAN ISLANDS

KURE I.

MIDWAY I.

PEARL AND HERMES REEF

LISIANSKI I.

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FRENCH FRIGATE SHOALS

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GARDNER I.

MALDEN I.

STARBUCK I.

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

30° NORTH

20°

10°

0°

10° SOUTH

180° WEST 170° 160° 150° WEST

0 100 200 300 400 500 STATUTE MILES

30° 20° 10° EQUATOR

Great Frigatebird

□ 1-15 June

○ = 16-31 June

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

JUNE

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

10° SOUTH

180° WEST 150° WEST

HAWAIIAN ISLANDS

KURE I.

MIDWAY I.

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GARDNER PINNACLES

FRENCH FRIGATE SHOALS

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SYDNEY I.

GARDNER I.

MALDEN I.

STARBUCK I.

LINE ISLANDS

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

100 200 300 400 500 STATUTE MILES

EQUATOR

Great Frigatebird

□ 1-15 June

○ = 16-31 June

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

JUNE

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

10° SOUTH

180° WEST 170° 160° 150° WEST

HAWAII

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STARBUCK I.

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

100 200 300 400 500 STATUTE MILES

EQUATOR

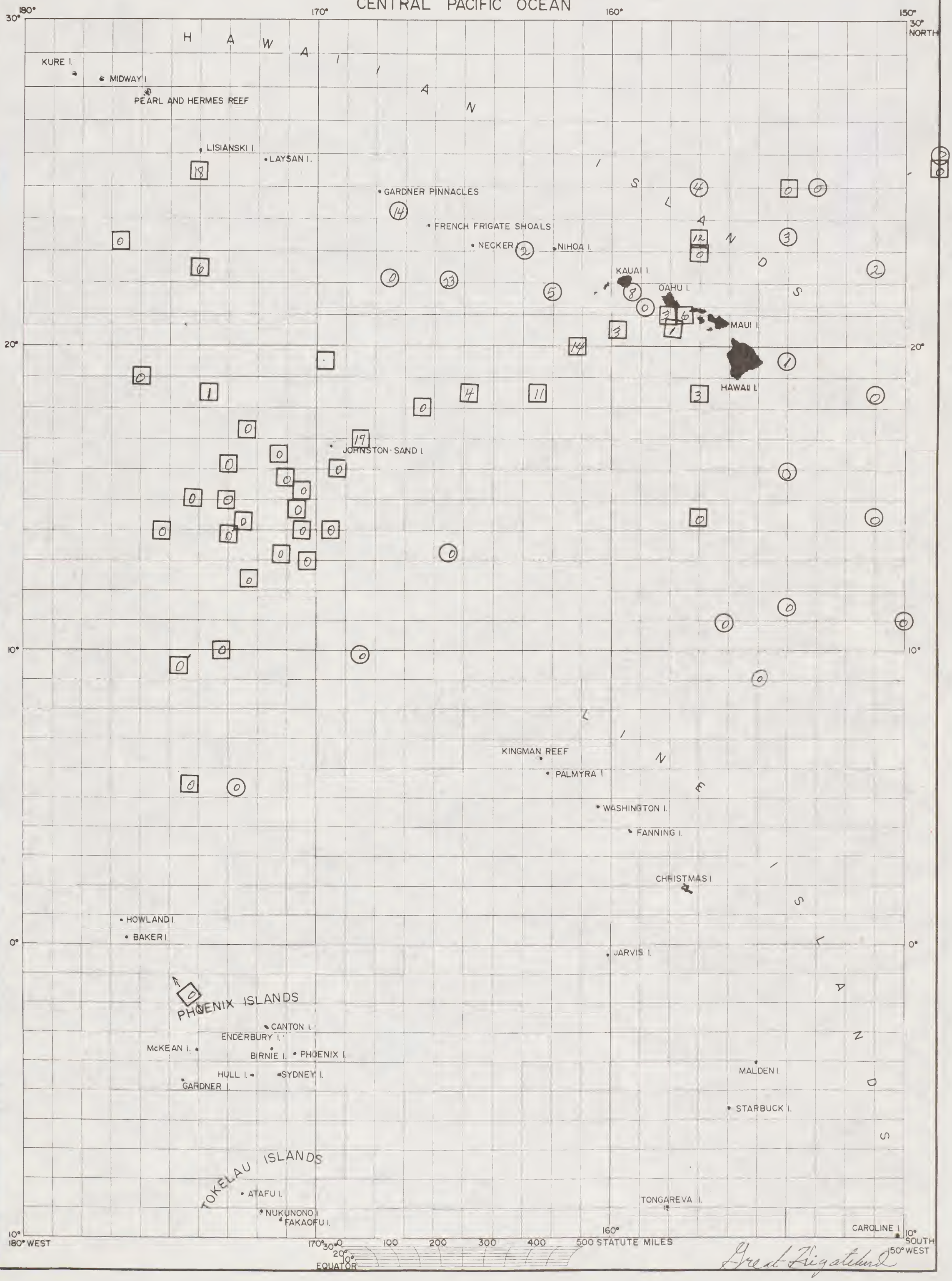
Great Frigatebird

□ 1-15 July
○ = 16-31 July
○ = 0 birds
(4) =1-10 birds
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500"
● =500+ "

JULY

SI-MN-38 (8-65)

CENTRAL PACIFIC OCEAN



Great Zigatelund

□ 1-15 July

○ = 16-31 July

○ = 0 birds

(4) =1-10 birds

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

JULY

SI-MN²-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

10° SOUTH

HAWAIIAN ISLANDS

KURE I.

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GARDNER I.

MALDEN I.

STARBUCK I.

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

180° WEST 170° 160° 150° WEST

0 100 200 300 400 500 STATUTE MILES

30° 20° 10° EQUATOR

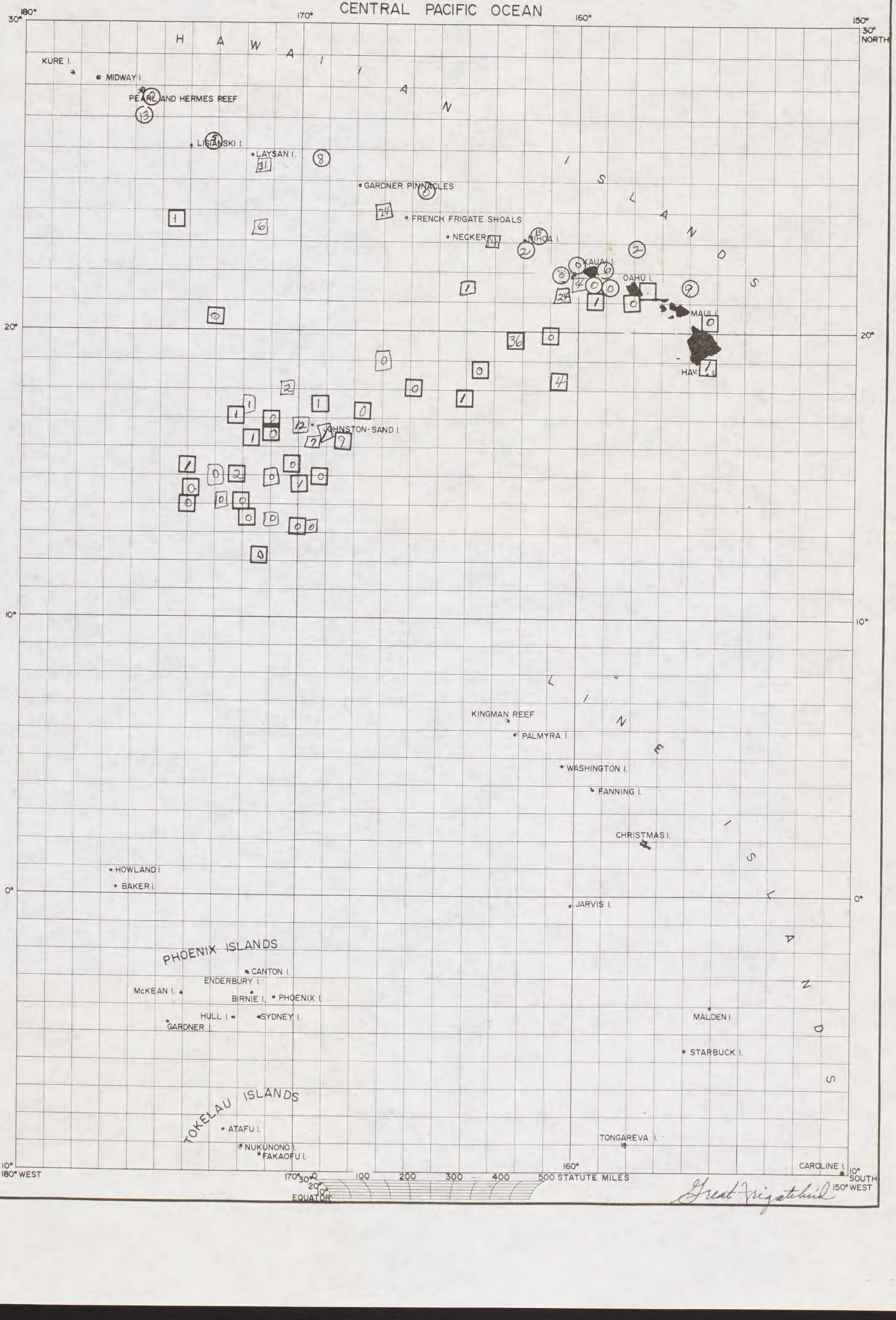
Great Frigatebird

□ 1-15 August
○ = 16-31 August
○ = 0 birds
④ = 1-10 "
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500"
● =500+ "

AUGUST

SI-MMH-38 (8-65)

CENTRAL PACIFIC OCEAN



Great Frigatebird

□ 1-15 August
○ = 16-31 August
○ = 0 birds
④ = 1-10 "
○ = 11-25 "
○ = 26-50 "
○ = 51-100 "
● = 101-500 "
● = 500+ "

AUGUST

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 170° 160° 150° WEST

HAWAIIAN ISLANDS

KURE I.
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STARBUCK I.

TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.

TONGAREVA I.
CAROLINE I.

0 100 200 300 400 500 STATUTE MILES
30° 20° 10° EQUATOR

Great Frigatebird

□ 1-15 September

○ = 16-31 September

○ = 0 birds

④ = 1-10 "

○ = 11-25 "

○ = 26-50 "

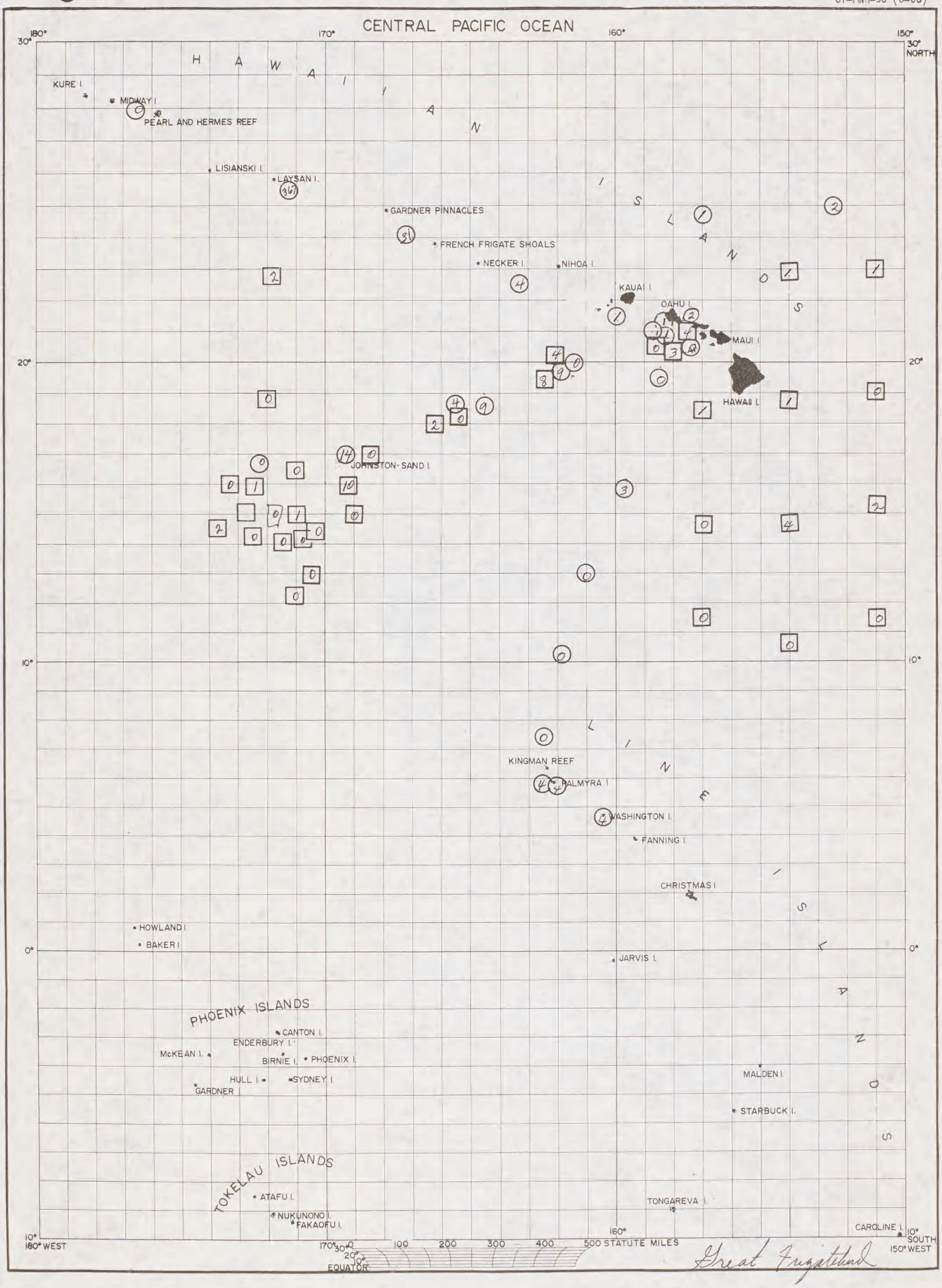
○ = 51-100 "

● = 101-500"

● = 500+ "

SEPTEMBER

SI-MNH-38 (8-65)



Great Frigatebird

□ 1-15 September

Ō = 16-31 September

○ = 0 birds

④ = 1-10 "

○ = 11-25 "

○ = 26-50 "

○ = 51-100 "

● = 101-500"

● = 500+ "

SEPTEMBER

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

HAWAIIAN ISLANDS

KURE I.

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PEARL AND HERMES REEF

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STARBUCK I.

TOKELAU ISLANDS

ATAFU I.

NUKUNONO I.

FAKAOFU I.

TONGAREVA I.

CAROLINE I.

30° NORTH

20°

10°

0°

10° SOUTH

180° WEST

170°

160°

150° WEST

0 100 200 300 400 500 STATUTE MILES

30° 20° 10° EQUATOR

Great Frigatebird

□ 1-15 October

○ = 16-31 October

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

OCTOBER

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

HAWAIIAN ISLANDS

KURE I.
MIDWAY I.
PEARL AND HERMES REEF
LISIANSKI I.
LAYSAN I.
GARDNER PINNACLES
FRENCH FRIGATE SHOALS
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TOKELAU ISLANDS
ATAFU I.
NUKUNONO I.
FAKAOFU I.
TONGAREVA I.
CAROLINE I.

30° NORTH
20°
10°
0°
10° SOUTH
180° WEST
170°
160°
150° WEST

0 100 200 300 400 500 STATUTE MILES
30° 20° 10° EQUATOR

Great Frigatebird

□ 1-15 October

○ = 16-31 October

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

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OCTOBER

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

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TOKELAU ISLANDS
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FAKAOFU I.

MALDEN I.
STARBUCK I.
TONGAREVA I.
CAROLINE I.

LINE ISLANDS

10° SOUTH

180° WEST 170° 160° 150° WEST

0 100 200 300 400 500 STATUTE MILES

30° 20° 10° EQUATOR

Great Frigatebird

□ 1-15 November

○ = 16-31 November

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

● =500+ "

NOVEMBER

SI-MNH-38(8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°

30° NORTH

20°

10°

0°

10° SOUTH

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CAROLINE I.

180° WEST 150° WEST

0 100 200 300 400 500 STATUTE MILES

EQUATOR

Great Frigatebird

□ 1-15 November

○ = 16-31 November

○ = 0 birds

④ = 1-10 "

○ =11-25 "

○ =26-50 "

○ =51-100 "

● =101-500"

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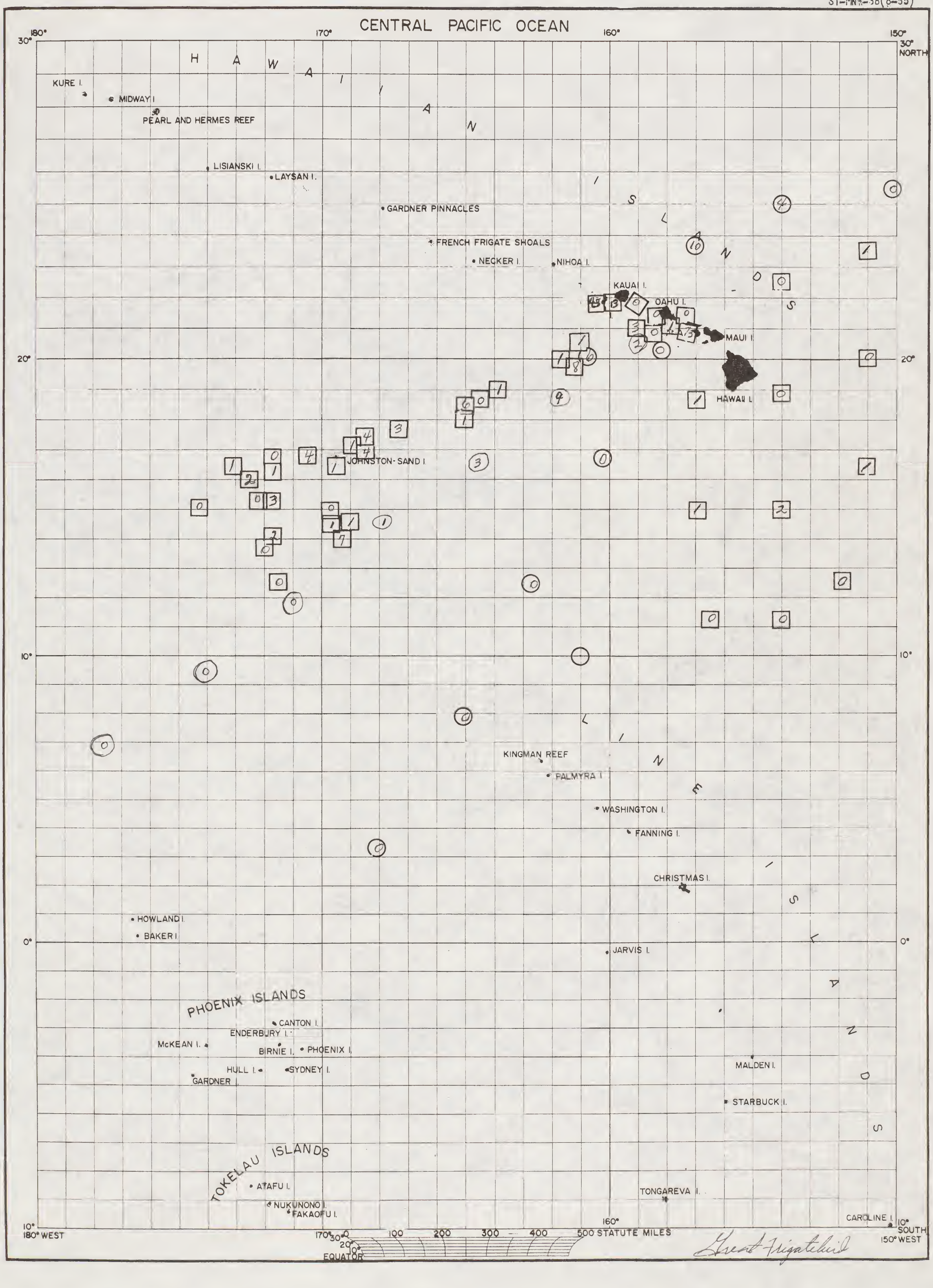
NOVEMBER

SI-MNH-38(8-65)

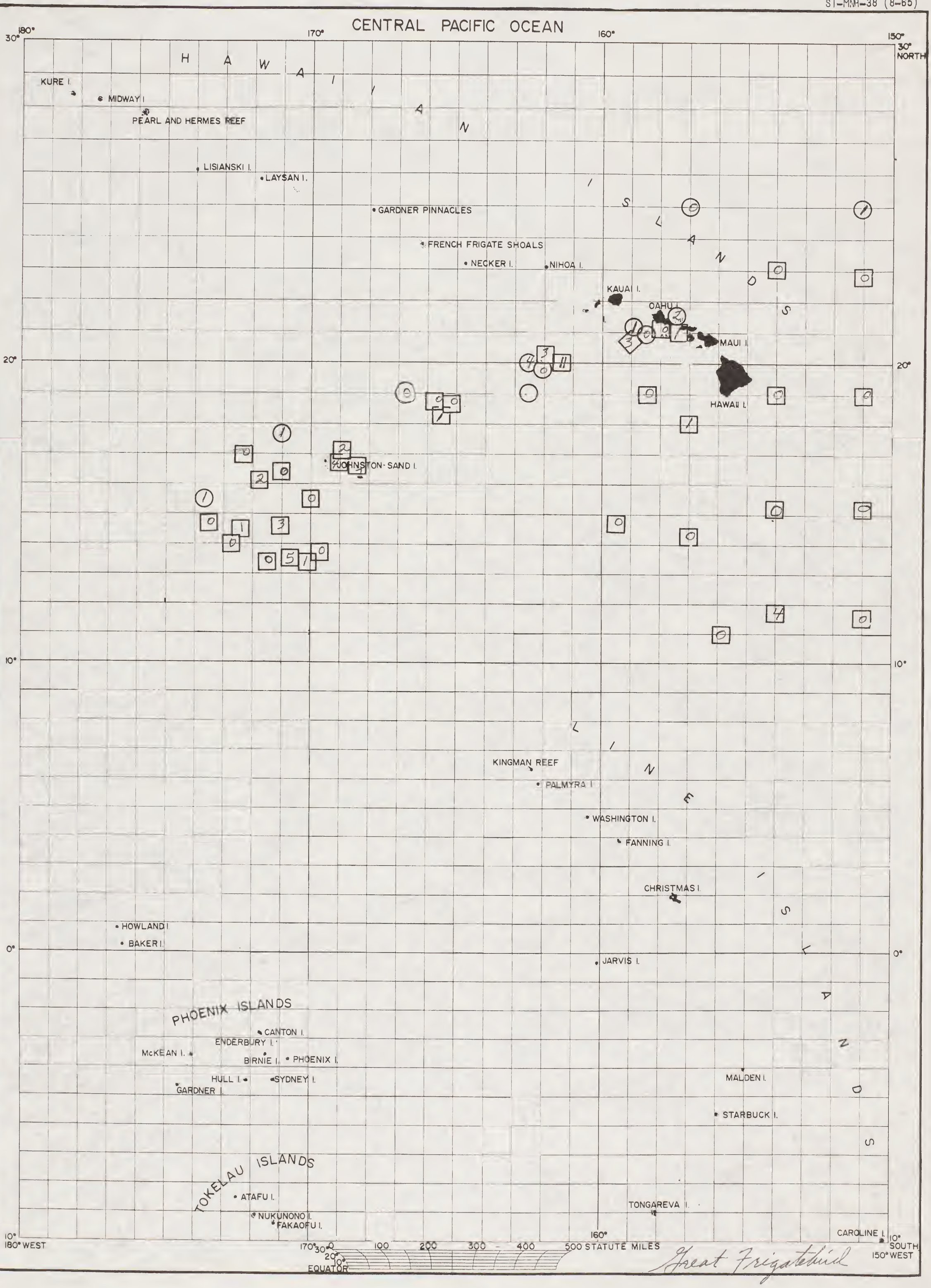


Great Frigatebird

□ 1-15 December
○ = 16-31 December
○ = 0 birds
④ = 1-10 "
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500"
● =500+ "

DECEMBER

SI-MNH-38 (8-65)



Great Frigatebird

□ 1-15 December
○ = 16-31 December
○ = 0 birds
④ = 1-10 "
○ =11-25 "
○ =26-50 "
○ =51-100 "
● =101-500"
● =500+ "

DECEMBER

SI-MNH-38 (8-65)

CENTRAL PACIFIC OCEAN

180° 170° 160° 150°
30° NORTH
20°
10°
0°
10° SOUTH
180° WEST 150° WEST

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ATAFU I.
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CAROLINE I.

0 100 200 300 400 500 STATUTE MILES
30° 20° 10° EQUATOR

Great Frigatebird